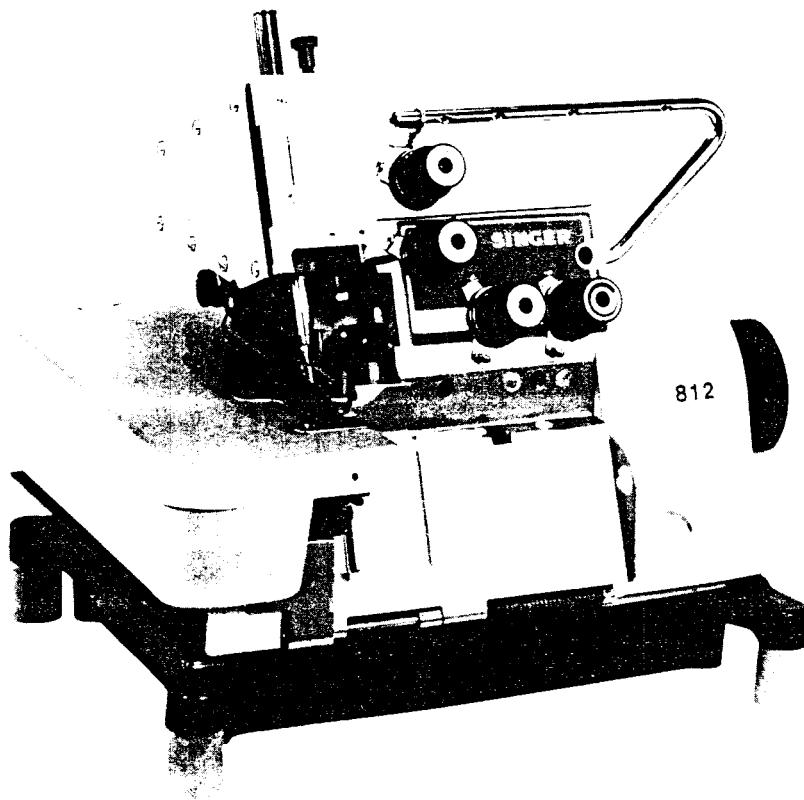


192580-102

# INSTRUCTION MANUAL

FOR

## SINGER 812U

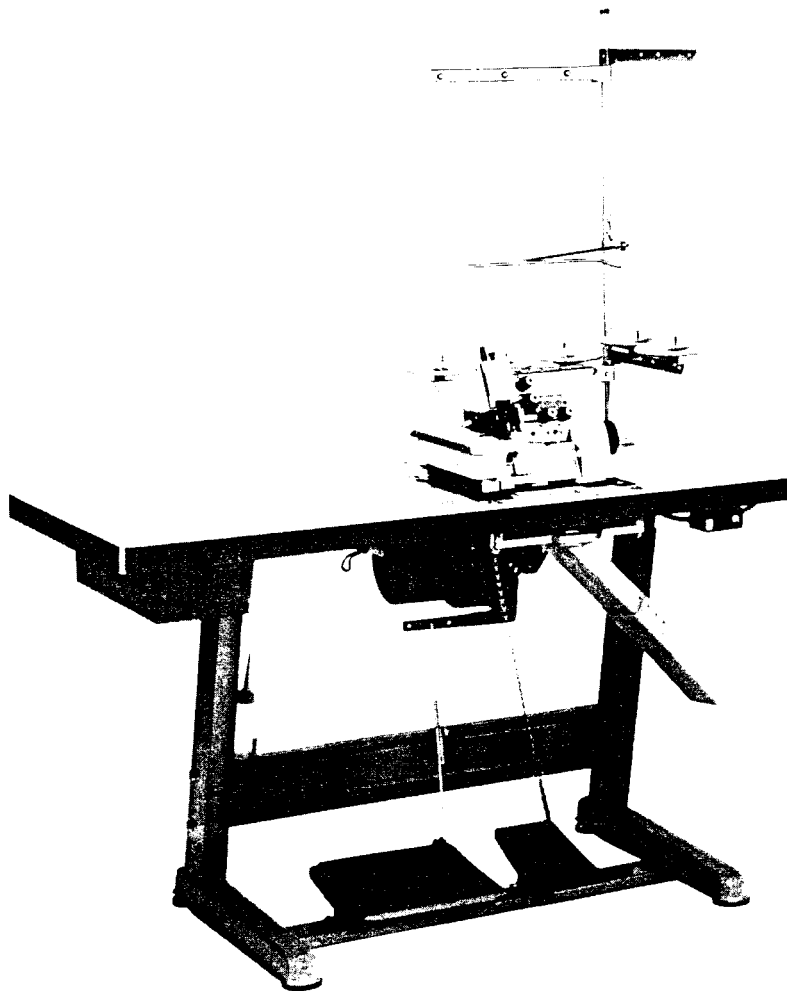


Safety Stitch Sewing Machine

THE SINGER COMPANY

## FEATURES

- ☆ These models have the same sewing performance as the high-speed types (Model 842U) so they can be used for run stitching, ruffling, bulky stitching and many other applications.
- ☆ Differential feed ratio can be changed by a "banana type" device which assures a wide differential range.
- ☆ Blade engaging angle can be easily adjusted for sharp cutting performance.
- ☆ Superb design and color brighten working environment and ensure to lessen the operator's fatigue.
- ※ Most of the gauge parts, expendable parts, attachments and other devices of these models are interchangeable with those of Model 842U.



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# KINDS OF SEWING MACHINES

THE SINGER COMPANY

## 812U

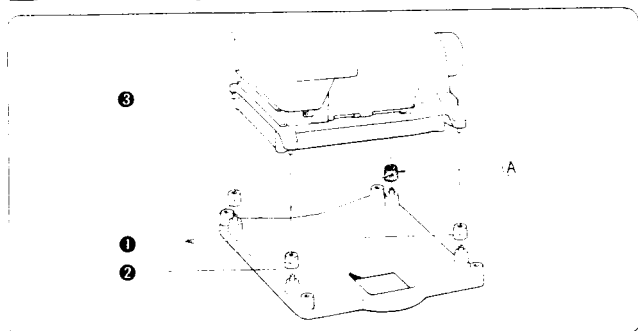
MADE IN JAPAN

Sub class No	Stitch type	No of Needles	No of threads	Needle gauge	Sewing width (Right)	Max stitch length	Differential ratio	Presser foot lift	Pitch	Feed dog	Main Differential Type	Needle size (Cat. No 6120)	Sewing speed (S.p.m)	Use		Devices
														Use		
061-3 -4		2	5	2	3	3.6	0.3~	4	1.6			#11	5000	Thin materials		—
					4		1.8							Blouses Dress shirts	Sewing sleeves on Forming sleeves Joining body parts	
062-3		2	4	2	3	3.6	0.3~	4	1.6			#11	5000	Thin materials		—
					4		1.8							Blouses Dress shirts	Sewing sleeves on Forming sleeves Joining body parts	
063-4 -5		2	5	3	3.6	0.3~	6	1.6			#14	5000	Thin & medium thick materials		—	
				5		1.8							Jumper Pajamas Ladies' & children's wear	Sewing sleeves on Forming sleeves Joining body parts Joining inner leg edges		
064-5		2	4	3	3.6	0.3~	6	1.6			#14	5000	Thin & medium thick materials		—	
				5		1.8							Jumper Pajamas Ladies' & children's wear	Sewing sleeves on Forming sleeves Joining body parts Joining inner leg edges		
065-5		2	5	5	3.6	0.3~	6	1.6			#16	5000	Medium thick & thick materials		—	
				5		1.8							Overalls Work pants Ladies' wear	Sewing sleeves on Forming sleeves Joining body parts Joining inner leg edges		
066-5		2	4	5	3.6	0.3~	6	1.6			#16	5000	Medium thick & thick materials		—	
				5		1.8							Overalls Work pants Ladies' wear	Sewing sleeves on Forming sleeves Joining body parts Joining inner leg edges		
067-4		2	5	2	3.3	0.3~	5	1.6			#14	5000	Ruffling thin & medium thick materials		Ruffler	
				4		2.7							Blouses Neglige	Sewing sleeves on Sewing cuffs on Sewing trills on		
069-5		2	5	3	3.3	0.3~	5	1.6			#14	5000	Ruffling thin & medium thick materials		Ruffler	
				5		2.7							Ladies' & children's wear Blouses Neglige	Sewing sleeves on Sewing cuffs on Sewing trills on		
071-6		2	5	5	3.3	0.3~	5	1.6			#14	5000	Ruffling thin & medium thick materials		Ruffler	
				6		2.7							Ladies' & children's wear	Sewing sleeves on Sewing cuffs on Sewing trills on		
073-4		2	5	2	3.3	0.3~	5	1.6			#14	5000	Ruffling thin & medium thick materials (Piping)		Wrapper Ruffler Tape winder	
				4		2.7							Blouses Neglige	Sewing sleeves on Sewing cuffs on Sewing trills on		

Sub class No.	Stitch type	No. of Needles	No. of threads	Needle gauge	Sewing width (Bight)	Max. stitch length	Differential ratio	Presser foot lift	Feed dog		Needle size (Cat. No. 6120)	Sewing speed (s.p.m.)	Use	Devices	
									Pitch	Main (Differential) Type					
075-5		2	5	3	5	3.3	0.3-2.7	5	1.6		≅ 14	5000	Ruffling thin & medium-thick materials (Piping)		Wrapper Ruffler Tape winder
													Ladies & children's wear	Sewing sleeves on Sewing cuffs on Sewing frills on	
077-6		2	5	5	6	3.3	0.3-2.7	5	1.6		≅ 14	5000	Ruffling thin & medium-thick materials (Piping)		Wrapper Ruffler Tape winder
													Ladies & children's wear	Sewing sleeves on Sewing cuffs on Sewing frills on	
079-4		2	5	2	4	3.6	0.3-1.8	4	1.6		≅ 11	5000	Thin materials		Tape guide
													Blouses Dress shirts	Sewing sleeves on Forming sleeves Joining body parts	
081-5		2	5	3	5	3.6	0.3-1.8	6	1.6		≅ 14	5000	Taping thin & medium-thick materials		Tape guide
													Ladies & children's wear Knitted underwear Pajamas	Joining shoulder parts	
082-5		2	4	3	5	3.6	0.3-1.8	6	1.6		≅ 14	5000	Thin & medium-thick materials		Tape guide
													Jumper Pajamas Ladies & children's wear	Sewing sleeves on Forming sleeves Joining body parts Joining inner leg edges	
083-5		2	5	5	5	3.6	0.3-1.8	6	1.6		≅ 16	5000	Medium-thick & thick materials		Tape guide
													Overalls Work pants Ladies wear	Sewing sleeves on Forming sleeves Joining body parts Joining inner leg edges	
087-6		2	5	5	6	3.6	0.3-1.8	3.5	2.5		≅ 19	5000	Heavy materials		Tractor foot
													Denim wear Curtains	Joining body parts Joining inner leg edges	
089-5		2	5	3	5	3.6	0.3-1.8	6	1.6		≅ 14	5000	Thin & medium-thick materials Binding		Binder Tape winder
													Coat Ladies & children's wear Knit wear	Sewing sleeves on Forming sleeves Joining body parts Joining inner leg edges	
092-6		2	5	5	6	3.6	0.3-1.8	3.5	2.5		≅ 19	5000	Heavy materials		Tractor foot Angle knife
													Denim wear Curtains	Joining body parts Joining inner leg edges	

# A. INSTALLING

## 1 Installing the machine head



The machine head is a semi submerged type. A set of parts for its installation are included in the accessories.

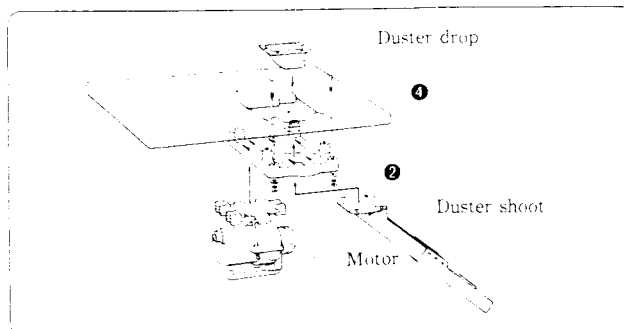
Install the machine head in the following order.

- (1) Fit four rubber pads **1** on head plate **2**.  
(Install the black rubber pad **A** into the right end pin as shown at figure.)

- (2) Place machine head **3** on rubber pads **1**.

## 2 Installing the chain

- (1) Install the chain **7** to link presser bar lifter lever **6** to the presser bar lifter pedal **5** as shown at right.



\*If you have purchase this machine as head only, install it as mentioned below.

- (a) Make table top **4** as shown in the attached table sheet.
- (b) Install head plate **2** as shown at figure.
- (c) Follow the above-mentioned installing order (1) and (2) for installing the machine head.

## 3 Sewing speed

The sewing speed of these models is 5,000 stitches per minute.

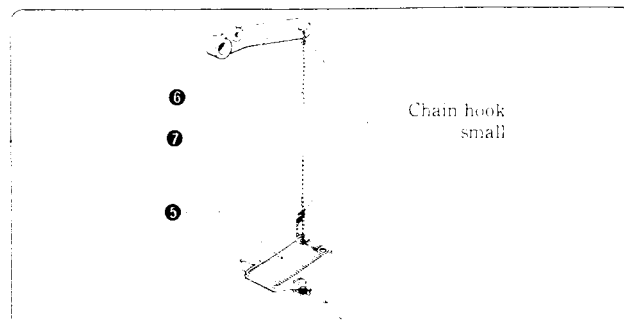
When using your new machine for the first time, operate it at about 4,500 stitches per minute for the first 100 hours (or about 2 or 3 months).

This will ensure your sewing machine a long life.

## 4 Motor pulley and belt

The motor to be used with machine must be a 2-pole, 400W, clutch motor.

Use a M-type V-belt.

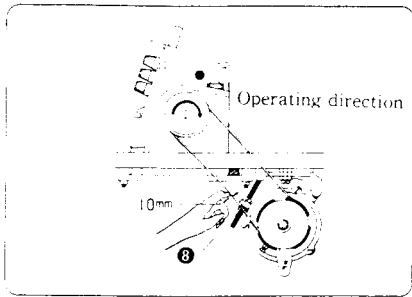


☆ Select a motor pulley and a belt by referring to the table at below.

Pulley O.D(mm)	70	75	80	85	90	95	100	105	110
Belt size (inches)	(37)								
	(36)								
	(35)								
Sewing speed (spm)	50Hz				4000		4500		5000
	60Hz	4000	4500	5000					

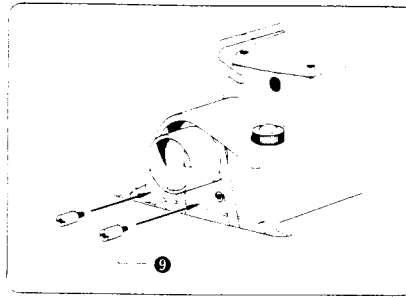
## 5 Installing the belt and belt cover

### Installing the belt

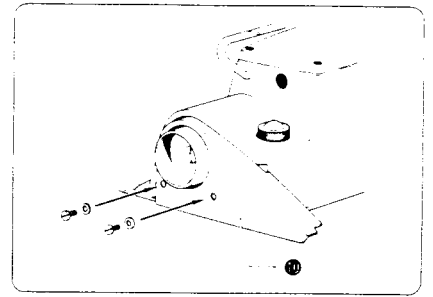


- (1) Adjust the nut **8** so that the belt will give in about 10mm when depressed with your finger.
- (2) The correct operating direction of your sewing machine is clockwise as viewed from the pulley side.

### Installing the belt cover

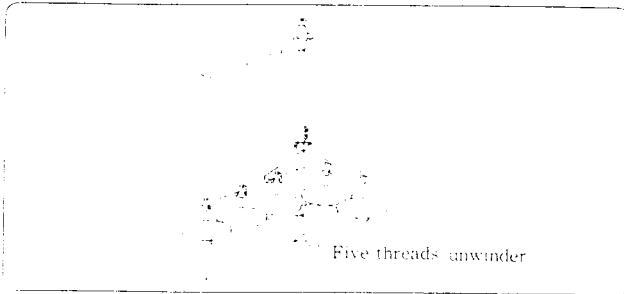


- (1) Install the stud **9** on the machine head.



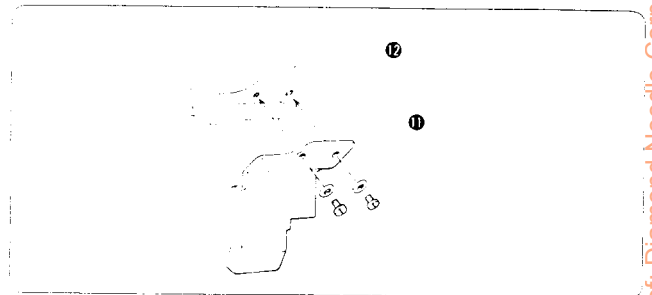
- (2) Install the belt cover **10** on the stud **9**.

## 6 Installing the thread unwinder



- (1) Install the thread unwinder in the right end corner of the table with screw, making sure that it will not interfere with machine operation.

## 7 Installing the eye guard



- (1) Install the eye guard **11** on the face plate cover **12**.

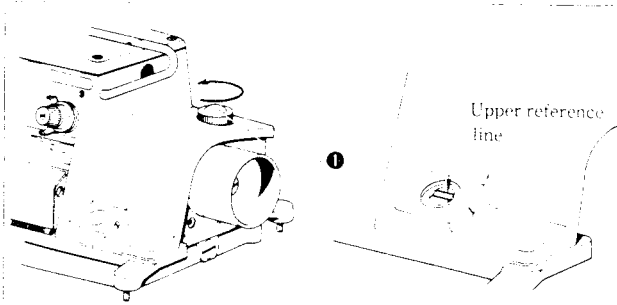
# B. OILING AND OIL DRAINING

### 1 Oil to be used

Use the oil (viscosity 37.8°C SUS70) supplied.

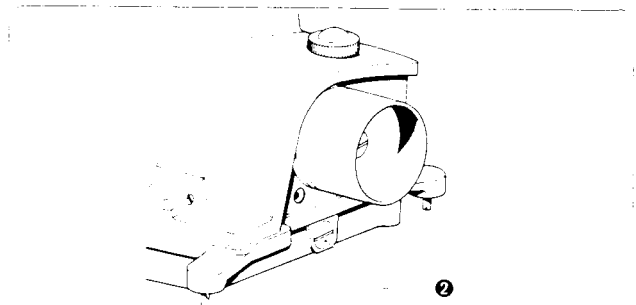
### 2 Oiling and oil change

#### 1. Oil supply



All oil has been completely discharged from the machine prior to shipment. Before operating your machine, remove oil cap **1** by turning it counter-clockwise, and pour oil in until oil level reaches the upper reference line, using the accessory funnel.

#### 2. Draining oil

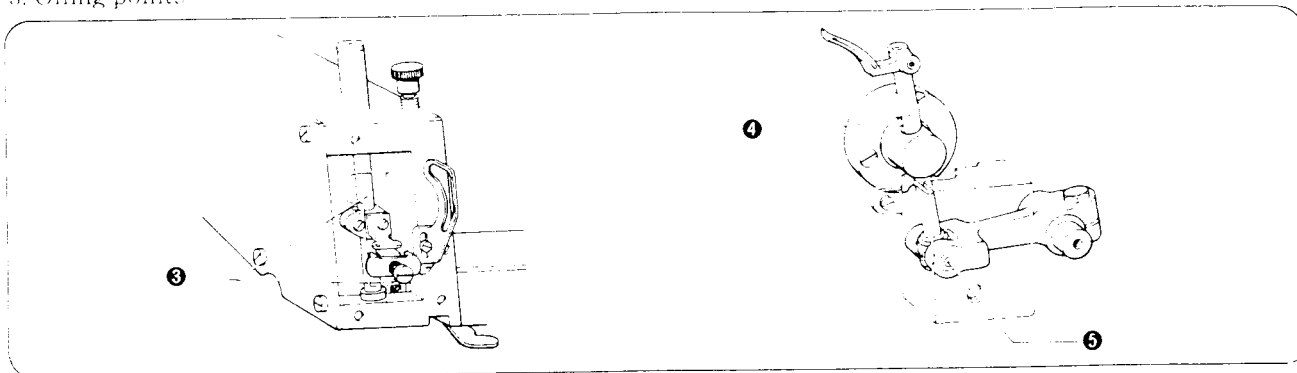


When draining the oil, remove screw **2** as shown at above.

Be sure to change the oil after running in.

After that period, change the oil once about every 3 months.

### 3. Oiling points



When operating the machine for the first time after unpacking it, or after a long period of non-use, be sure to pour a few drops of oil on needle bar ③ and over looper holder ④.

※ If the machine is used every day, it need not be oiled daily.  
But few drops of oil on only over looper driving lever ⑤ once a week.

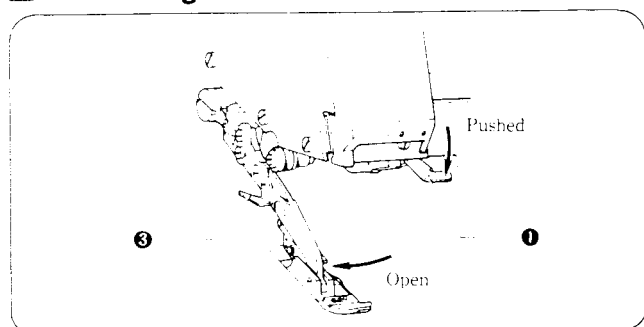
## C. CORRECT WAY OF OPERATION

### 1 Needle and thread

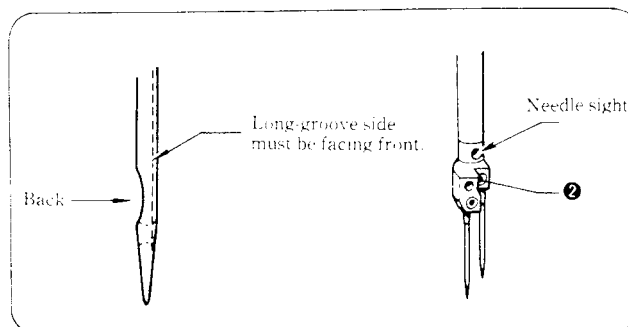
Select a needle and thread by referring to the table below.

Fabrics	Needle		Needle thread		Looper thread	
	Type	Size	Type	Count	Type	Count
Broad cloth	Cat. No. 6120	≒ 11	Cotton	≒ 80	Cotton	≒ 80
	"	≒ 11	Dacron	≒ 80	Dacron	≒ 80
Jersey	"	≒ 14	Dacron	≒ 50	Woolly Nylon	110 2 denier
Gabardine	"	≒ 16	Cotton	≒ 50	Cotton	≒ 50
Denim	"	≒ 19	Cotton	≒ 30	Cotton	≒ 30

### 2 Installing the needle



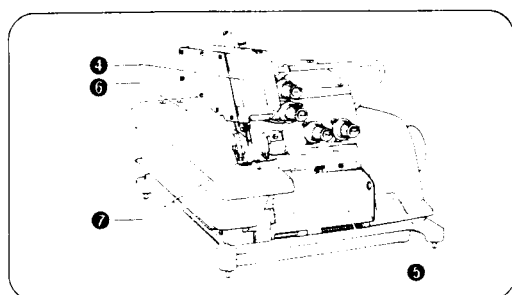
(1) Turn the pulley until the needle bar is raised close to the highest position, press down presser bar lifter ①, and open presser arm ② in the arrow direction.



(2) Loosen needle clamp screw ②, hold the needle with its long groove facing front insert the needle all the way into the needle clamp hole, and then tighten the needle clamp screw.

(3) Install trimming knife ③ on the main presser arm.

### 3 Threading

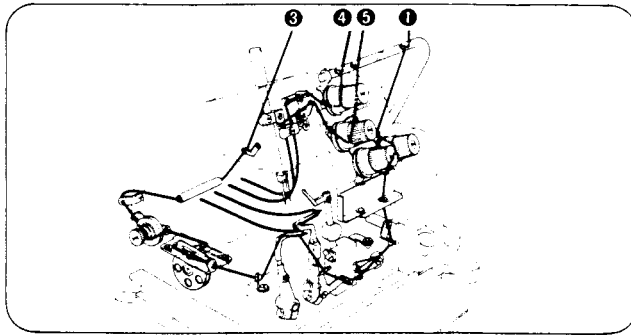


Before threading, open face plate cover ④, front cover ⑤ and cloth plate ⑥, turn the pulley until the needle is raised up highest, and then open presser arm ⑦.

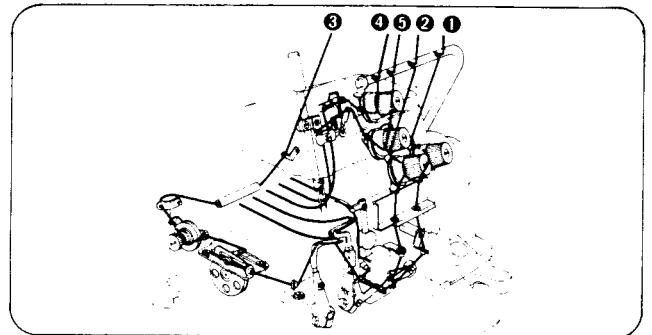
Then, pass the thread in the order of the numbers shown.



### In case of four threads



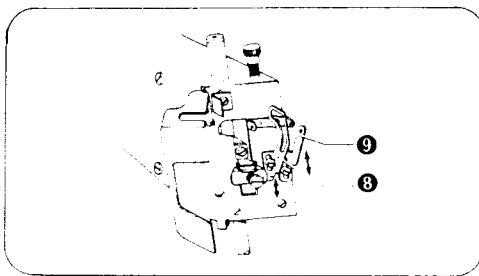
### In case of five threads



## 4 Thread tension

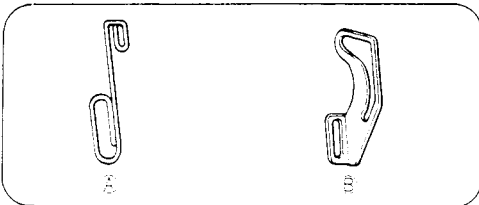
Thread tension may change depending on the kind of the cloth and thread used, stitch width, stitch length, the position of each thread take-up, and the position of the thread guides.

If it changes so much, adjust it as mentioned below.



### 1. Adjusting the overlock stitch needle thread take-up.

To increase the thread tension, lower needle thread take-up 8. To decrease it, raise the thread take-up. The center position in the adjustable range is standard.



### 2. Adjusting the double-chain stitch needle thread guide.

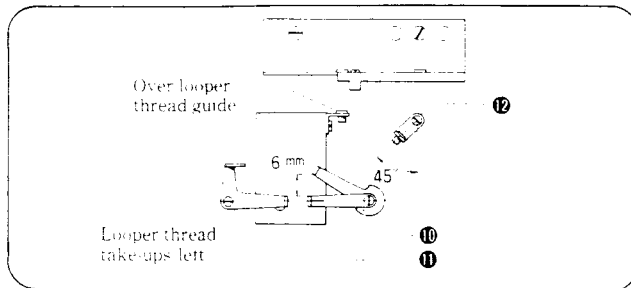
Raise double-chain stitch needle thread guide 9 to increase the needle thread tension.

Or lower it to decrease the tension.

The standard needle thread tension is obtained when the guide is in the center stitch position.

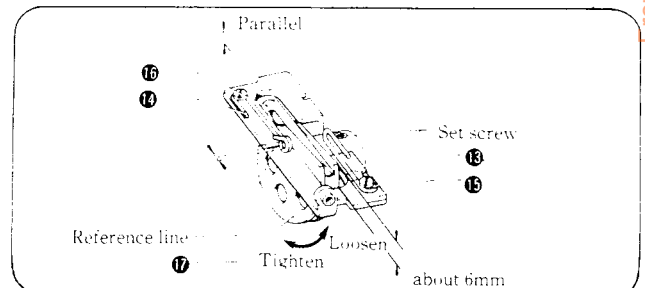
Use the thread take-up for two threads A or for three threads B as appropriate to your sewing purpose.

### 3. Adjusting the overlock stitch looper thread take-ups and thread guide.



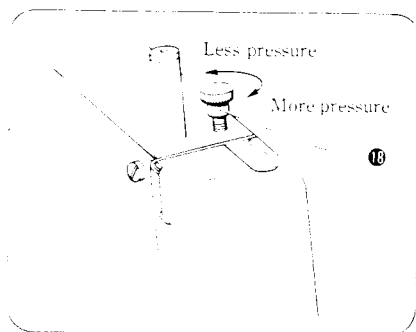
- (1) The above figure shows the standard positions of the looper thread take-ups and each thread guide when the needle bar is up highest.
- (2) More thread will be fed when looper thread take-ups right 10, 11 are raised; and less thread when they are lowered.
- (3) More thread will be fed when under looper thread guide 12 is moved to the left (more angle); and less thread when it is moved to the right (less angle).

### 4. Adjusting the double-chain stitch thread take-up and thread guide.



- (1) Thread take-up thread guides, right 13 and left 14, must be positioned symmetrically in the thread take-up thread guide hole with the reference line on thread take-up holder 15 in the center.
- (2) Thread handler 16 must be positioned parallel to the thread take-up holder.
- (3) Adjust the timing of double-chain stitch thread take-up assembly 17 to pull back the looper thread when the needle bar is in the highest position.
  - The height of the double-chain stitch thread take-up assembly from the thread take-up holder is about 6mm.
- (4) The looper thread loosens when the double-chain stitch thread take-up assembly is advanced (turned counterclockwise), and tightens when it is delayed (turned clockwise).

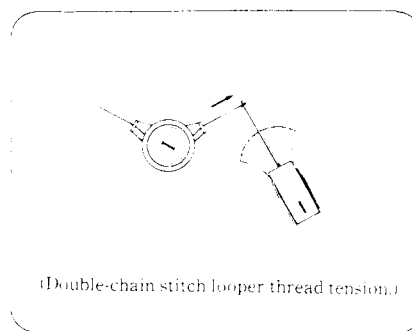
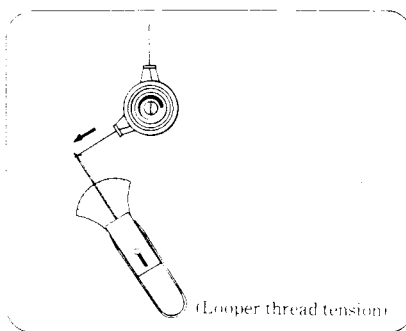
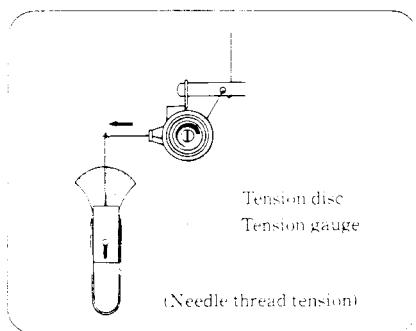
## 5. Presser foot pressure adjustment



(1) Adjust the presser foot pressure with presser foot adjusting screw 18

## 6. Thread tension

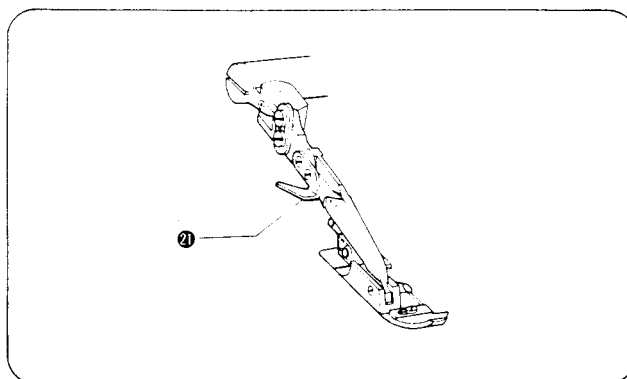
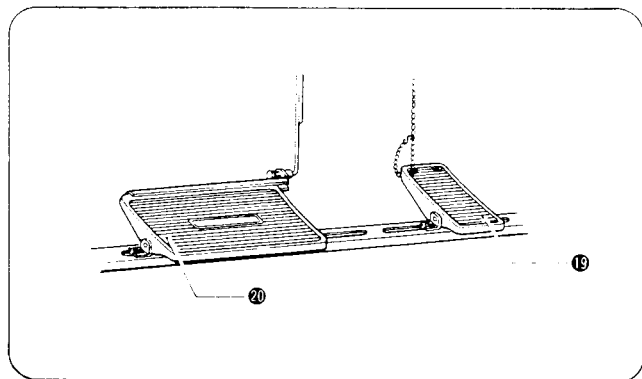
Measure the thread tension as shown at below.



Adjust the tension of each thread by referring to the table below. (In grams)

Fabrics	Thread		Double-chain stitch needle thread tension	Double-chain stitch looper thread tension	Over thread tension	Over looper thread tension	Under looper thread tension	
	Kind	Count						
Broadcloth	Cotton	≒ 80	20 ~ 50	5 ~ 15	40 ~ 90	10 ~ 25	8 ~ 20	
	Dacron	≒ 80	15 ~ 45	5 ~ 10	30 ~ 80	8 ~ 20	5 ~ 15	
Jersey	Needle Looper	Dacron Woolly Nylon 110 2 denier	≒ 50	25 ~ 60	8 ~ 20	25 ~ 50	5 ~ 15	8 ~ 20
Gabardine	Cotton	≒ 50	35 ~ 60	6 ~ 15	50 ~ 100	7 ~ 20	10 ~ 30	
Denim	Cotton	≒ 30	80 ~ 110	10 ~ 20	70 ~ 150	10 ~ 25	15 ~ 30	

## 5. How to sew

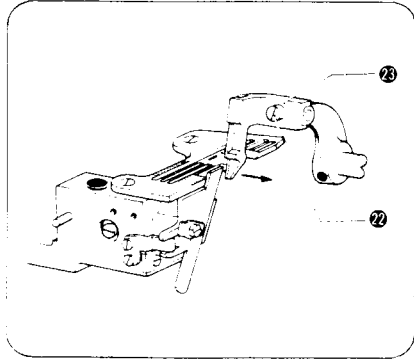


- (1) Press the push power switch ON.
- (2) Depress presser bar lifter pedal 19, place a small part of the work under the presser foot, and release the presser bar lifter pedal.
- (3) When treadle 20 is depressed, the work will be fed and sewn.
- (4) After sewing, run the machine without the work until about 5 or 6 cm of thread is out, and cut the trimming knife 21 by pulling the thread toward yourself.

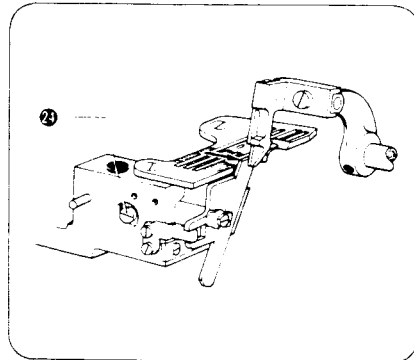
## 6 Adjusting stitch width

Since stitch width depends on cloth trimming width and the width of the needle plate's tongue, cloth trimming width must be changed at the same time in case of changing stitch width by more than 1mm.

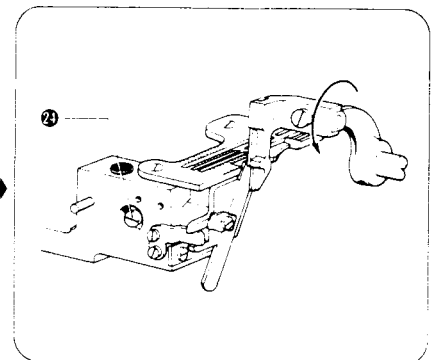
### 1. To increase stitch width



(1) Loosen upper knife holder set screw 22, move upper knife holder 23 rightward as much as necessary, and retighten the set screw 22 securely.

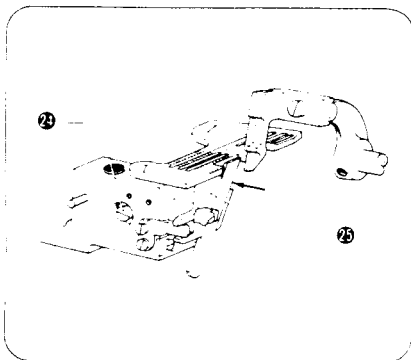


(2) Loosen lower knife holder set screw 24, and make the lower knife pushed against the upper knife by the lower knife holder spring.

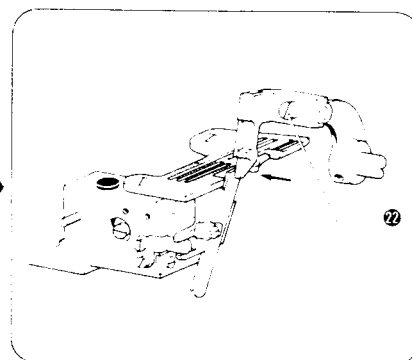


(3) Turn the pulley until the upper knife falls to the lowest position and retighten the lower knife holder set screw 24.

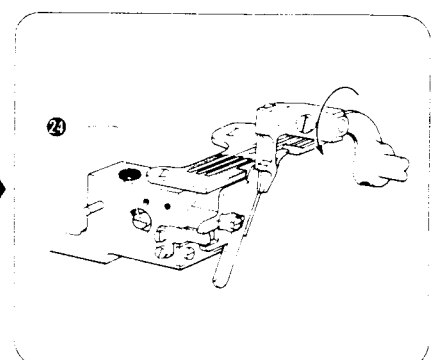
### 2. To decrease stitch width



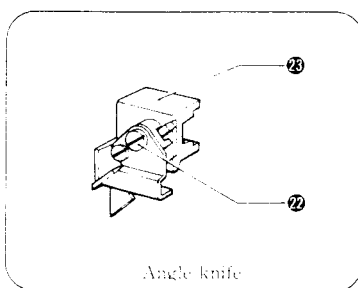
(1) Loosen the lower knife holder set screw 24, move lower knife holder 25 leftward as much as necessary, and temporarily tighten the set screw 24.



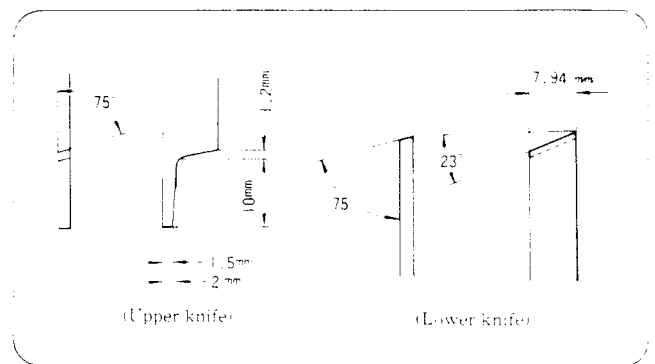
(2) Loosen the upper knife holder set screw 22, move the upper knife holder until the upper knife contacts the lower knife, and retighten the set screw 22 securely.



(3) Loosen temporarily tightened set screw 24, make sure that the lower knife is pushed against the upper knife, turn the pulley until the upper knife falls to the lowest position, and retighten set screw 24.



※ In case of angle knife, please unfasten screw 22 and do same adjustment.



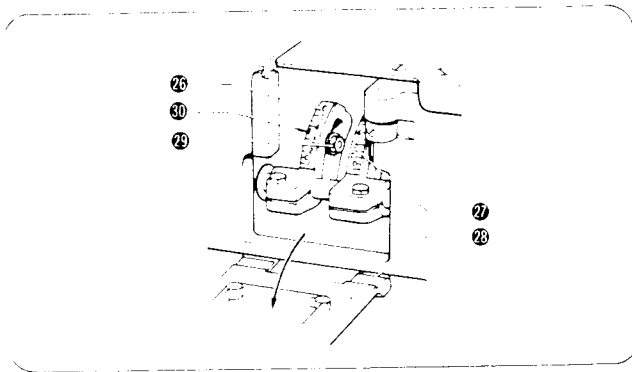
#### (Caution)

If the knife cutting performance has dropped, sharpen the upper knife or lower knife as shown at right.

## 7 Adjusting stitch length and the differential feed

The numerals on the scales of main feed arm 26 and differential feed arm 27 indicate stitch length in millimeters, but actual stitch length varies with the kind and thickness of the material and the differential feed.

## 1. Adjusting stitch length



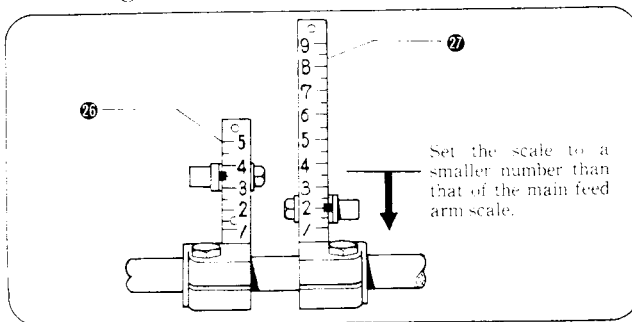
**Caution:** If the main feed arm 26 and differential feed arm 27 are set to any scale value greater than those shown at right, the feed dogs will hit the edges of the slots in the needle plate.

- (1) A desired stitch length can be selected by means of the scale on main feed arm 26, which can be adjusted as follows:
  - (a) Pull and open feed mechanism cover B 28 on the back of the machine.
  - (b) Loosen nut 29.
  - (c) Move feed link indicator plate 30 until its red mark is in line with that number on the scale which represents your desired stitch length.
  - (d) Retighten nut 29 securely.
- (2) Adjust the scale on differential feed arm 27 in the same way as the scale on main feed arm 26.

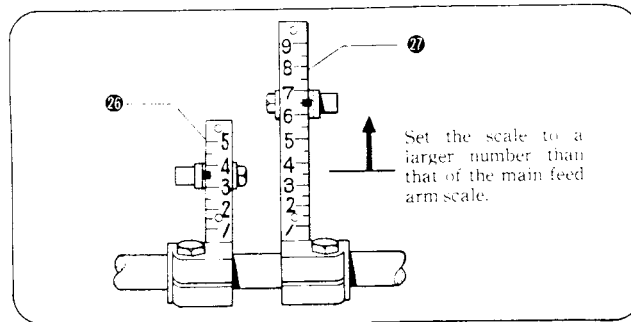
Specifications	Feed arm	Main feed arm	Differential feed arm
Run stitching Denim		3.6mm	6.5mm
Ruffler		3.3mm	9.0mm
Bulky		2.5mm	9.0mm

## 2. Adjusting the differential feed

(The figures below apply to the case of the maximum stitch length in run stitching.)



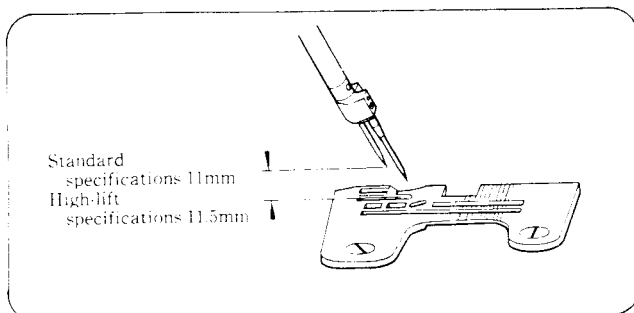
- (1) In the case of lengthen stitch  
Set the scale on differential feed arm 27 to a smaller number than that of the scale on main feed arm 26.



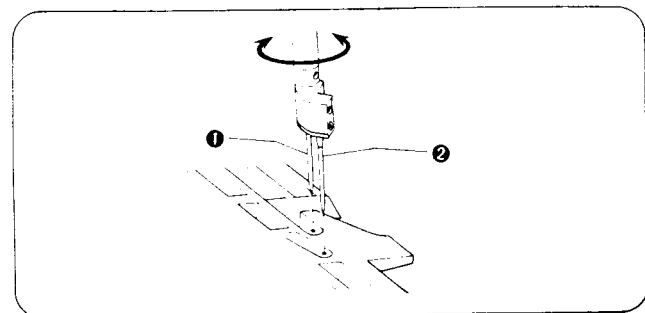
- (2) In the case of wrinkle stitch  
Set the scale on differential feed arm 27 to a larger number than that of the scale on main feed arm 26.

# D. STANDARD ADJUSTMENTS

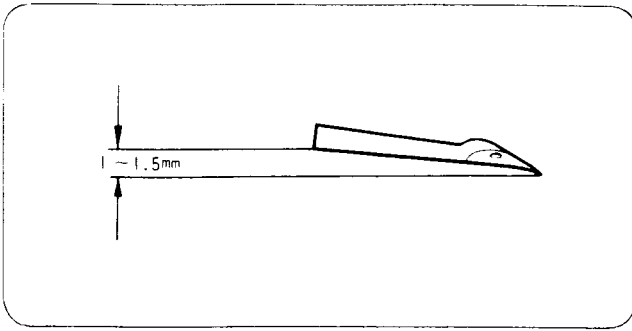
## 1 Adjusting the under looper and needle bar



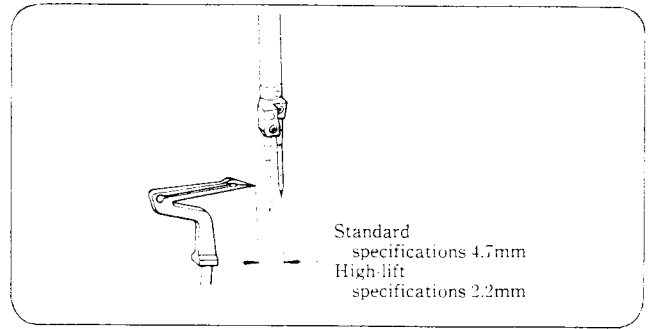
- (1) In case of sewing machines made to the standard specifications, adjust the distance between the needle point and the top of the needle plate to 11mm when the needle is up highest.  
The sewing machine of the high-lift specifications must be adjusted to a distance of 11.5mm between them.



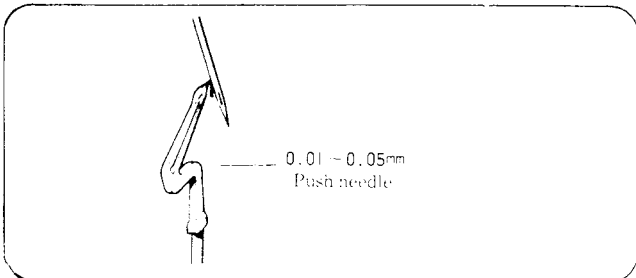
- ※ Turn the needle bar about over-needle 1 until double-chain stitch needle 2 is in line with the center of the hole in the needle plate.



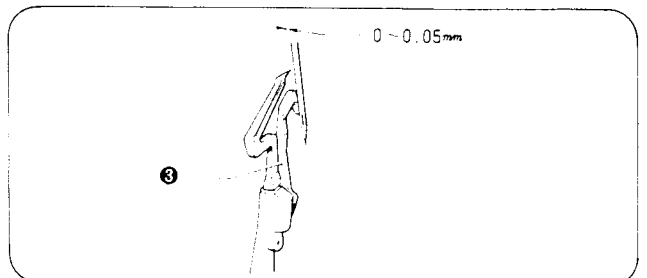
(2) Tilt the under looper by 1~1.5mm, insert it all the way into the under looper holder, and install it.



(3) In case of sewing machine made to the standard specifications, adjust the distance between the under looper point and the needle center to 4.7mm when the under looper is at the leftmost position. The sewing machine of the high-lift specifications must be adjusted to a distance of 2.2mm between them.

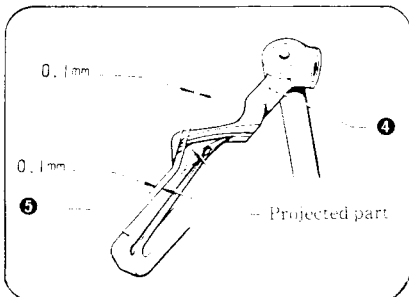


(4) With the point of the under looper in line with the center of the needle, make an adjustment so that the point of the under looper will push the needle 0.01~0.05mm (i.e., slightly contact the needle) in the upward travel of the needle.

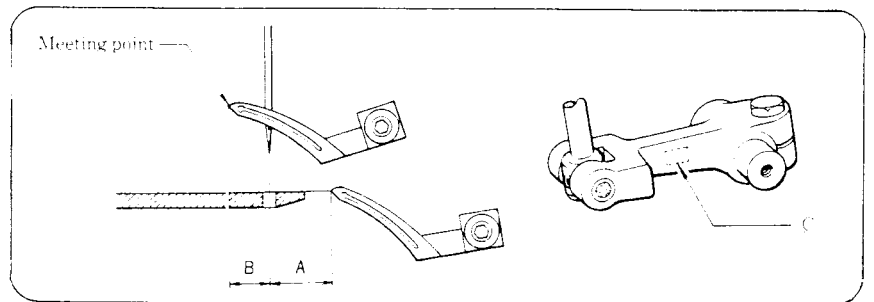


(5) Foregoing the condition of (4), push the needle with movable needle guard ③ until there is a clearance of 0~0.05mm between the needle and the point of the under looper.

## 2 Adjusting the over looper

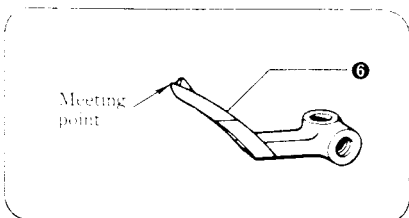


(1) Make an adjustment so that, when over looper ④ meets under looper ⑤, the point of the over looper will pass clear of the under looper about 0.1mm below its projected part.



(2) Select meeting measurements from the table below.

There are over looper: Standard type, high-lift type.



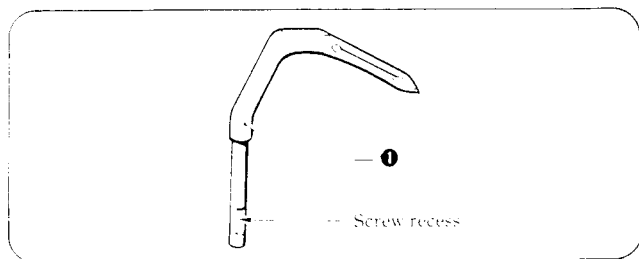
(3) The meeting measurements of over spreader (for two threads) ⑥ are the same as those of the over looper.

※ Check part C on the over looper arm and see whether the machine is for standard use (S) or high-lift use (H).

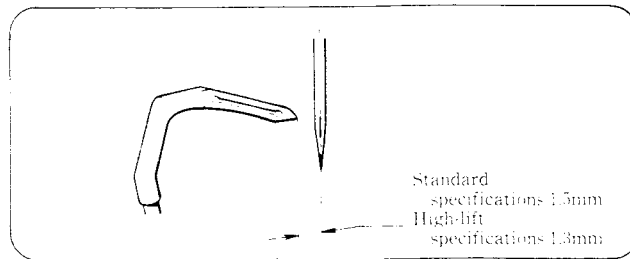
(In millimeters)

Spec.	Standard	High-lift
A	7.2	5.2
B	5.0	3.0

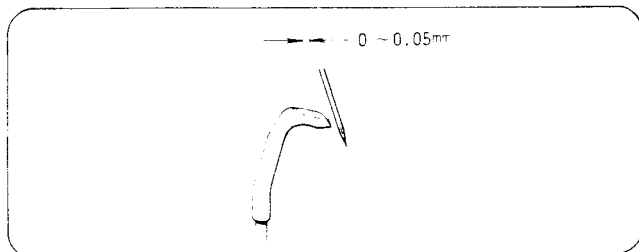
### 3 Adjusting the double-chain stitch looper



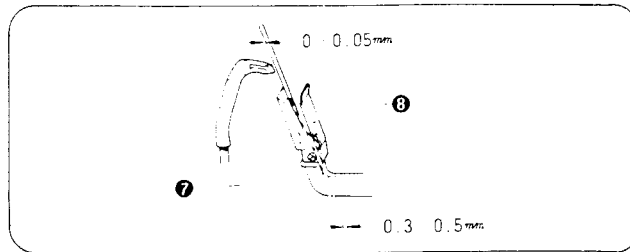
(1) Install the double-chain stitch looper ① by inserting it all the way into the double-chain stitch looper holder.  
The inclination of the looper depends on the screw recess.



(2) In case of sewing machines made to the standard specifications, adjust the distance from the looper point to the center of the needle to 1.5mm when the double-chain stitch looper is at the leftmost position. The sewing machine of the high-lift specifications must be adjusted to a distance of 1.3mm between them.

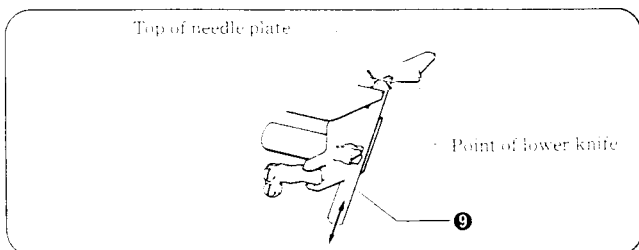


(3) Adjust the clearance between the point of the double-chain stitch looper and the needle to somewhere from 0 ~ 0.05mm when the double-chain stitch looper point comes to the center of the needle during the needle's rising process.  
(If stitches skip, the double-chain stitch looper point must be so adjusted as to contact the needle 0.05 ~ 0.1mm deep.)

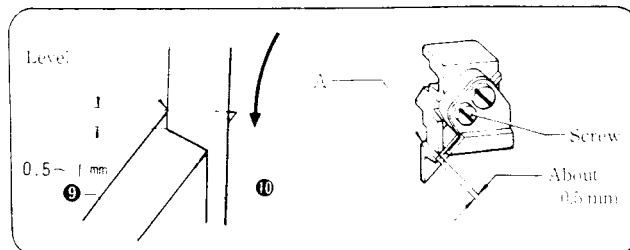


(4) Foregoing the condition of (3), push the needle with chain stitch needle guard B ⑦ until there is a clearance of 0 ~ 0.05mm between the needle and the point of the double-chain stitch looper. Adjust the clearance between the needle and chain stitch needle guard F ⑧ to 0.3 ~ 0.5mm.

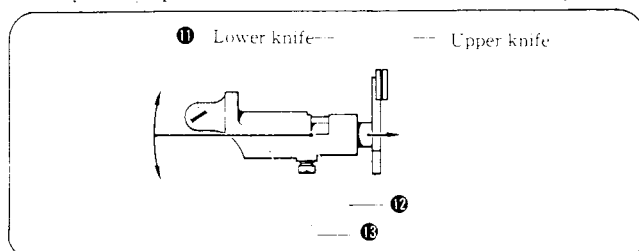
### 4 Adjusting thread trimming



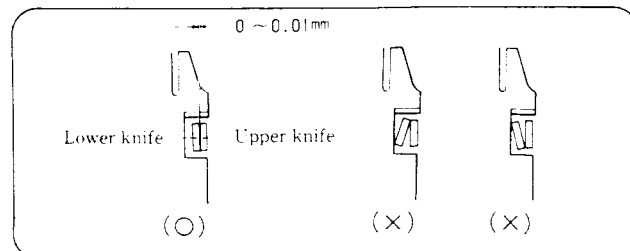
(1) Adjusting the height of the lower knife ⑨ until the point of the lower knife is flush with the top of the needle plate.  
In case of angle knife, please unfasten screw and adjust A portion to be about 0.5 mm in length.



(2) Adjust the height of upper knife ⑩ so that, when the upper knife is lowered to its lowest position, it will engage lower knife ⑨ 0.5 ~ 1mm deep. Also align the lower knife corner with the end face of the upper knife.

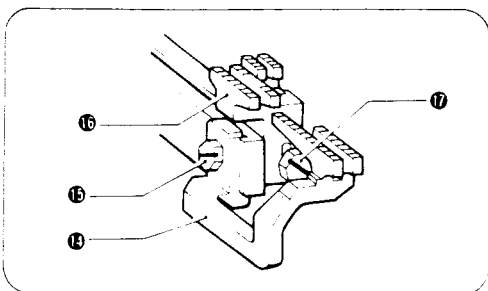


(3) Adjust the lower knife angle in the following order.  
(a) Loosen set screw ⑪ and bolt ⑫.  
(b) Turn lower knife holder support ⑬ about bolt ⑫ until there is a clearance of about 0 ~ 0.01mm in the forward direction.  
(c) Retighten set screw ⑪ and bolt ⑫ securely.



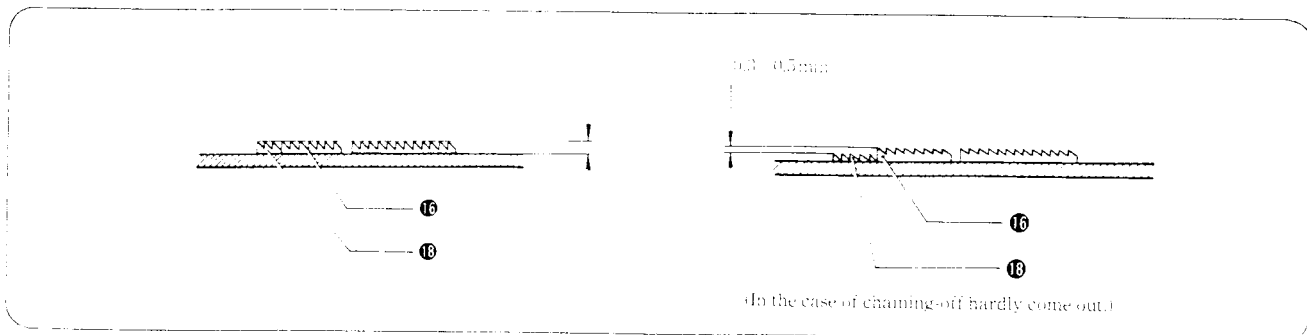
**Caution:** The above-mentioned adjustment is not necessary because your machine has already been adjusted on the assembly line. If a readjustment should become necessary, exercise great care not to damage the knives due to excessive engagement of the upper and lower knives.

## 5 Adjusting the feed dogs



(1) Loosen bolt 15, and raise or lower differential feed dog 14 to the correct height.

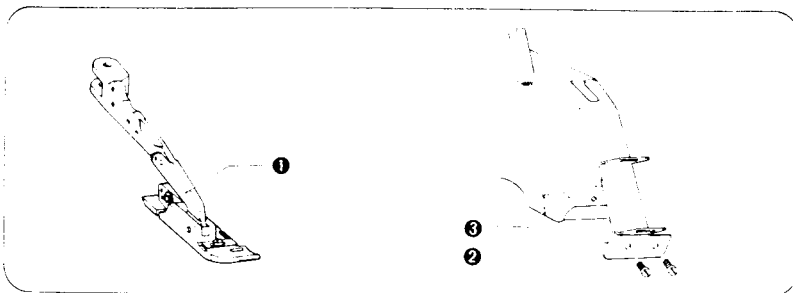
Loosen bolt 17 and adjust main feed dog 16.



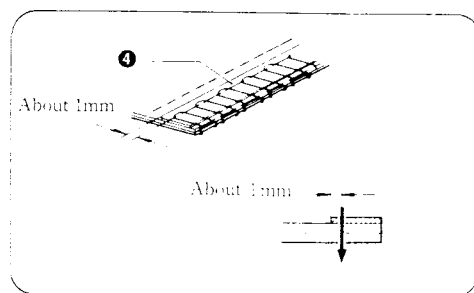
- (2) Turn the pulley until the feed dogs are raised to the highest position, and adjust them to the following height above the top of the needle plate.
  - 1.0mm for thin materials.
  - 1.3mm for medium-thick materials.
  - 1.5mm for thick materials.
- (3) Install chaming-off feed dog 18 at the same height as main feed dog 16. If free chain stitches hardly come out, lower it as shown at upper right.

## E. INSTALLING AND ADJUSTING ATTACHMENTS

### 1 Taping



- (1) Replace the presser foot assembly with presser foot for taping 1.
- (2) Install tape guide 2 on face plate cover 3.



- (3) Sewn stitches will be as shown at above.

(Sew tape on only in case of serging.)

**Caution:** Select a stitch width so the right edge of tape will not be cut by the knives. Otherwise, tape may not be sewn on in a satisfactory way.

# TROUBLESHOOTING GUIDE

Trouble	Cause	Inspection	Remedy	Page
	Wrong threading	Threading	See paragraph on threading.	5
	Excessive tension disc pressure.	Tension disc pressure	Adjust to proper pressure.	7
	Poor-quality thread.	Thread quality	Use thread of good quality.	5
	Thread is too thick for needle eyelet.	Needle size	Use needle of correct size or thread of correct count.	5
<b>Thread break</b>	Needle installed incorrectly.	Direction and height of needle	See paragraph on needle installing.	5
	Needle groove and needle eyelet finished poorly.	Needle groove and needle eyelet	Replace with good needle.	5
	Needle, loopers and thread takeups not positioned properly to one another.	Clearance between needle and looper; position of thread takeups.	See paragraphs on adjustment of under looper VS. needle bar and thread tension.	9 6
	Needle, loopers, needle plate, thread passage have flaws.	Flaws of needle, loopers, needle plate, thread passage.	Smooth with oil stone or buff.	/
	Wrong threading.	Threading	See paragraph on threading.	5
	Excessive tension disc pressure.	Tension disc pressure.	Adjust to proper pressure.	7
	Needle installed incorrectly.	Direction and height of needle.	See paragraph on needle installing.	5
<b>Stitches skip</b>	Needle point blunt or bent.	Needle point and bend.	Replace with new needle.	5
	Needle loopers and thread takeups not positioned properly to one another, or have incorrect clearance.	Clearance between needle and loopers. Timing. Thread takeup position.	See paragraphs on adjustment of under looper VS. needle bar and thread tension.	9 6
	Needle and needle guard not positioned properly to one another.	Clearance between needle and needle guard.	See paragraph on adjustment of under looper VS. needle bar.	9
	Looper point hangs down.	Looper point.	Correct with oil stone, or replace with new looper.	/



Trouble	Cause	Inspection	Remedy	Page
	Needle installed incorrectly.	Direction and height of needle	See paragraph on needle installing.	5
	Needle bent.	Needle bend.	Replace with new needle.	5
<b>Needle break</b>	Needle and loopers positioned improperly to one another.	Clearance between needle and loopers, their timing.	See paragraphs on adjustment of under looper VS. needle bar and adjustment of over looper.	9
		Clearance between needle and needle guard.		9
	Needle and needle guard positioned improperly to one another.			
	Wrong threading.	Threading	See paragraph on threading	5
	Excessive thread tension.	Tension disc pressure.	Adjust to correct thread tension.	7
<b>Doesn't work well without cloth. (Over lock sewing)</b>	Loopers, thread takeups, and thread guide not positioned properly to one another.	Positions of loopers, thread takeups, thread guide.	See paragraph on thread tension.	6
		Feed dog height.	See paragraph on feed dog adjustment.	12
	Main and differential feed dogs not uniform in height.			
	Needle plate's tongue has flaws.	Flaws of needle plate's tongue.	Smooth with sandpaper and polish with buff.	
	Wrong threading.	Threading	See paragraph on threading.	5
	Tensions of needle and looper threads are too great or too small.	Tension disc pressure.	Adjust to correct tensions.	7
<b>Doesn't work well without cloth. (Double-chain stitch sewing)</b>	Needle thread guide positioned incorrectly.	Thread guide position.	See paragraph on adjustment of double-chain stitch needle thread guide.	6
	Wrong timing of double-chain stitch thread takeup assembly.	Thread takeup timing.	See paragraph on adjustment of double-chain stitch thread takeup and thread guide.	6
	Main and differential feed dogs are not level with one another.	Feed dog height.	See paragraph on feed dog adjustment	12
<b>Poor trimming performance</b>	Upper knife and lower knife worn.	Edges of upper knife and lower knife.	Sharpen lower knife; see paragraph on stitch width adjustment.	8
	Upper and lower knives installed incorrectly.	Positions of upper and lower knives.	See paragraph on knife adjustment.	11

Trouble	Cause	Inspection	Remedy	Page
<b>Needle makes too large holes in cloth</b>	Needle point blunt.	Crush of needle point.	Replace with new needle.	5
	Needle too thick for cloth.	Needle size.	Replace with thinner needle.	5
	Wrong threading.	Threading	See paragraph on threading.	5
<b>Improper thread nipping</b>	Thread is too thick for needle eyelet.	Thread count	Replace with correct needle or thread.	5
	Tension discs don't work right	Operation of tension discs.	Remove dust from between tension discs to let them work smoothly.	
	Needle, loopers and thread takeups positioned improperly to one another.	Timing of needle and loopers; positions of thread takeups.	See paragraphs on adjustment of under looper VS. needle bar and thread tension.	9 6
<b>Irregular stitches</b>	Wrong threading.	Threading	See paragraph on threading.	5
	Thread not uniform in thickness.	Thread quality	Use thread of good quality.	5
	Thread passage defective.	Flaws of thread passage.	Smooth thread passage	
	Thread takeups and thread guides not positioned properly to one another.	Positions of thread takeups and thread guides.	See paragraph on thread tension.	6
	Upper and lower knives don't cut well.	Edges of upper and lower knives.	See paragraph on stitch width adjustment (Caution).	8
Lower knife installed incorrectly.	Position of lower knife.	See paragraph on knife adjustment.	11	

**SINGER\***

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